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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,515

09/29/2006

Gerhard Bock

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7590

10/19/2009

K&L Gates LLP
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CHICAGO, IL 60690

EXAMINER

BYRNE-DIAKUN, JORI S

ART UNIT

PAPER NUMBER

2878

MAIL DATE

DELIVERY MODE

10/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,515	Applicant(s) BOCK ET AL.	
	Examiner Jori S. Byrne-Diakun	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Applicants' communication filed (amendment) on 17 June 2009. In virtue of this communication, claims 3-6 are currently presented in the instant application.

Response to Arguments

1. Applicant's arguments filed 17 June 2009 have been fully considered but they are not persuasive. Applicant asserts (on Page 4 of Applicant's Remarks) that *Cannon et al. (U.S. Patent No. 6,844,951 B2; herein referred to as Cannon)* fails to teach "[detecting] a position of the oscillating mirror using a modulated brightness level obtained from the at least one light sensor" (Claim 3) or "detecting an oscillating status and position of an oscillating mirror using the modulated brightness level obtained from the light sensor" (Claim 5). Examiner respectfully disagrees. *Cannon* describes the function of the system of Fig. 9 as providing "imaged in the form of light modulation" (Col. 8, Line 67 - Col. 9, Line 1), thereby clearly establishing that the light received at the sensors is modulated light (therefore having a modulated brightness level). *Cannon* further establishes that the optical sensors (A and B) as shown in Fig. 9 receive and detect the light (therefore necessarily detecting the position and status of the oscillating mirror, as denoted by the dotted lines shown in Fig. 9). Therefore, it is clear that the optical sensors shown in Fig. 9 detect the position of the oscillating mirror (and status thereof) using a modulated brightness level (causing the sensor to register the incoming light signal) by the light sensors. Applicant further asserts (on Page 5 of Applicant's Remarks) that "automatic power control schemes are merely a way to compensate for unwanted variations in light intensity" and "do not use this unwanted modulation (or any other modulation) in order to detect a position of an oscillating mirror" as claimed. Examiner respectfully notes that APC is merely a type of

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brightness/intensity modulation which is implicit to a device such as *Cannon*. Based on Applicant's amendment to the independent claims, the scope and broadest reasonable interpretation of “brightness of the projection light bundle [being] modulated” changed thereby rendering the above interpretation of the brightness modulation of *Cannon* more relevant to the newly amended claims.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 3-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Cannon.

With respect to Claim 3, Cannon et al. discloses, in Fig. 9, an optical system for projecting a laser comprising an oscillating mirror (oscillator 50; wherein 50 is represented in more detail in Fig. 1, specifically with regard the oscillating component being mirror 60), a laser light source (laser 78), wherein a projection light bundle is produced starting from the laser light source using the oscillating mirror (see Fig. 9 for direction of the light bundle), and at least one light sensor is arranged at an edge region of the projection light bundle that detects a position of the oscillating mirror using a modulate brightness level obtained from the at least one light

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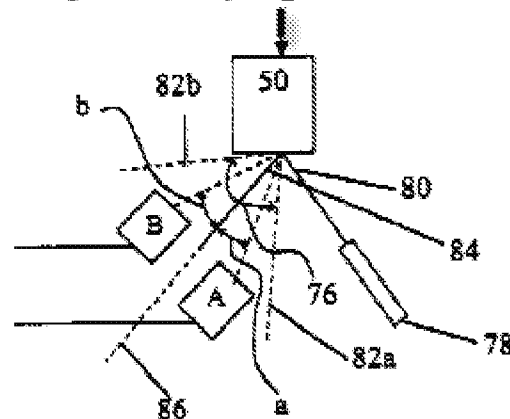
sensor (optical sensors A and B; wherein said sensors are located within limits 82a and 82b; see above for further clarification).

With respect to Claim 4, Cannon et al. further discloses that the brightness of the projection light bundle is modulated at least in a partial region of an image to be projected (wherein the brightness of the projection light bundle is modulated both by implicitly disclosed laser light intensity controls, such as APC schemes, and via the modulation to the light beam for imaging as noted above in the “Response to Arguments” section in at least a partial region of the image to be projected) and that the position of the oscillating mirror is determined by correlating the modulation of the projection light bundle with a detector signal from the light sensor (further see Fig. 11: As cited above in the “Response to Arguments” section, the sensors necessarily detect the position and status of the oscillating mirror, as denoted by the dotted lines shown in Fig. 9, as a result of detecting the modulated brightness level. It is clear from Fig. 9 that the position is necessarily detected as stated above because the optical sensors detect modulated brightness to register the light signal, thereby establishing a known position correlated with the detection by the light sensor; see *Diagram I*).

Diagram I: (from Fig. 9 of Cannon)

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Modulated brightness detected by sensor A is correlated with a detector signal representing the detection of a light signal from the mirror resulting in the establishment of the position/status of the mirror as represented by angle a.



Modulated brightness detected by sensor B is correlated with a detector signal representing the detection of a light signal from the mirror resulting in the establishment of the position/status of the mirror as represented by angle b.

With respect to Claim 5, Cannon et al. discloses, in Fig. 9, a method of operating an optical system for projecting with a laser comprising modulating a brightness level at least in a partial region of an image to be projected in the projection system (wherein the brightness of the projection light bundle is modulated both by implicitly disclosed laser light intensity controls, such as APC schemes, and via the modulation to the light beam for imaging as noted above in the “Response to Arguments” section in at least a partial region of the image to be projected), obtaining a modulated brightness level and using said modulated brightness level for detecting the oscillation status and position of an oscillating mirror using the light sensor (optical sensors A and B; wherein said sensors are located within limits 82a and 82b; see above for further clarification).

With respect to Claim 6, Cannon et al. further discloses that the position of the oscillating mirror is determined by correlating the modulation with a detector signal generated from the light sensor (further see Fig. 11: As cited above in the “Response to Arguments” section, the sensors necessarily detect the position and status of the oscillating mirror, as denoted by the dotted lines shown in Fig. 9, as a result of detecting the modulated brightness level. It is clear from Fig. 9 that the position is necessarily detected as stated above because the optical sensors detect modulated brightness to register the light signal, thereby establishing a known position correlated with the detection by the light sensor; see *Diagram I* above).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jori S. Byrne-Diakun whose telephone number is (571) 270-7555. The examiner can normally be reached on 7:30 AM to 5 PM EST, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. B./
Examiner, Art Unit 2851
09/29/2009

/Diane I Lee/
Supervisory Patent Examiner, Art Unit 2851